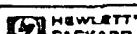


DWWD203032400



## INVENTION DISCLOSURE

PONO 10003219

DATE RCVD 3-27-2000

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ATTORNEY mlu

**Instructions:** The information contained in this document is COMPANY CONFIDENTIAL and may not be disclosed to others without prior authorization. Submit this disclosure to the HP Legal Department as soon as possible. No patent protection is possible until a patent application is authorized, prepared, and submitted to the Government.

## Descriptive Title of Invention:

Centralized Internet Cookie to facilitate consistent ordering

## Name of Project:

[REDACTED]

## Product Name or Number:

[REDACTED]

Was a description of the invention published, or are you planning to publish? If so, the date(s) and publication(s):

No.

Was a product including the invention announced, offered for sale, sold, or is such activity proposed? If so, the date(s) and location(s):

No.

Was the invention disclosed to anyone outside of HP, or will such disclosure occur? If so, the date(s) and name(s):

No.

*If any of the above situations will occur within 3 months, call your IP attorney or the Legal Department now at 1-857-2542 or 415-857-2542*

Was the invention described in a lab book or other record? If so, please identify (lab book #, etc.)

No.

Was the invention built or tested? If so, the date:

No.

Was this invention made under a government contract? If so, the agency and contract number:

No.

**Description of Invention:** Please preserve all records of the invention and attach additional pages for the following. Each additional page should be signed and dated by the inventor(s) and witness(es).

- A. Prior solutions and their disadvantages (if available, attach copies of product literature, technical articles, patents, etc.).
- B. Problems solved by the invention.
- C. Advantages of the invention over what has been done before.
- D. Description of the construction and operation of the invention (include appropriate schematic, block, & timing diagrams; drawings; samples; graphs; flowcharts; computer listings; test results, etc.).

Signature of Inventor(s): Pursuant to my (our) employment agreement, I (we) submit this disclosure on this date: [ 3/27/00 ].

Employee No.	Name	Signature	303	Imaging Supplies Division R&D	Entity & Lab Name
Employee No.	Name	Signature	303	Imaging Supplies Division R&D	Entity & Lab Name
Employee No.	Name	Signature	303	Imaging Supplies Division R&D	Entity & Lab Name
Employee No.	Name	Signature	303	Imaging Supplies Division R&D	Entity & Lab Name
Employee No.	Name	Signature	Telnet	Mailstop	Entity & Lab Name

*(If more than four inventors, include additional information on another copy of this form and attach to this document)*

Exhibit A

## Abstract

For a management solution such as Auto-Reorder, we need someplace to centrally store some of the ordering preferences so the customer can order and interact in a consistent fashion.

Usually this consistency is implemented through the use of "cookies". However, cookies are usually stored on the browsing PC. This poses a problem when the customer may need to browse inconsistently from several PC's.

This disclosure suggests a solution to the problem.

## Cookie Background

### What are Cookies?

Cookies (a.k.a. Magic Cookies) are used to pass a snippet of information to another system to make it do something. The cookie is usually a text file saved in your browser's directory or folder and stored in RAM while your browser is running. Most of the information in a cookie is usually mundane items, but some websites use cookies to store personal preferences. An example is when a browser stores your passwords and user ID's. They are also used to store preferences of start pages. Common uses for cookies are:

*Online Ordering Systems* – An online ordering system might use cookies that remember what a person wants to buy or credit card information.

*Site Personalization* – If a person visits the MSNBC site but doesn't want to see any sports news, the website allows the person to choose the option to not see sports news. The selection is then stored in a cookie and stored on that person's PC. The next time the person visits MSNBC, the cookie is retrieved and the person will not see any sports news.

*Targeted Marketing* – A cookie can be used to build a profile of where you go and what advertisements you click on. This information is then used to target other advertisements at you.

*User ID's* – In Internet Explorer 3.0 the first part of the cookie is your Win95 login name. This could help identify "who" is accessing the website.

### How Cookies Work

A command line in the HTML of a document tells the browser to set a cookie of a certain name and value. An example used to set a cookie:

**Set-Cookie: NAME=VALUE; expires=DATE; path=PATH; domain=DOMAIN\_NAME;**

The cookie contains several parameters:

- The name of the cookie. The name of the cookie and its value are set simply by pairing them together.
- The value of the cookie.
- The expiration date of the cookie. The expiration date determines the lifetime of the cookie. If a cookie lasts longer than the browser session, it is stored on the PC.
- The path the cookie is valid for. The path parameter sets the URL path the cookie is valid within. Pages outside that path cannot read or use the cookie.
- The need for a secure connection to exist to use the cookie.

## Auto-Reorder Background

ISD (Imaging Supplies Division) is implementing a consumables management (a.k.a. "Auto-reorder" & "Order Assistance") system for toner, paper, & maintenance items. The intent of this system is to make management of printers easier for our customers. This particular disclosure focuses on a large corporate environment with many printers and a centralized MIS department.

One of the solutions ISD is investigating involves a centralized web server that is capable of monitoring a group or groups of printers (and other devices) and notifying an individual responsible for ordering consumables for the group of printers ("the purchaser"). This invention solves issues surrounding several scenarios:

- The purchaser may not always interact with the ordering system from the same PC each time
- There may be more than one person acting in the role of purchaser for a group of printers.

- There may be several groups of printers, each with a separate purchaser, but a need to have uniformity throughout the corporation in the order placement.

Another variant involves the web server being part of the printer with no person playing the role of a formal centralized purchaser.

Each of the scenarios is described in detail in the following section.

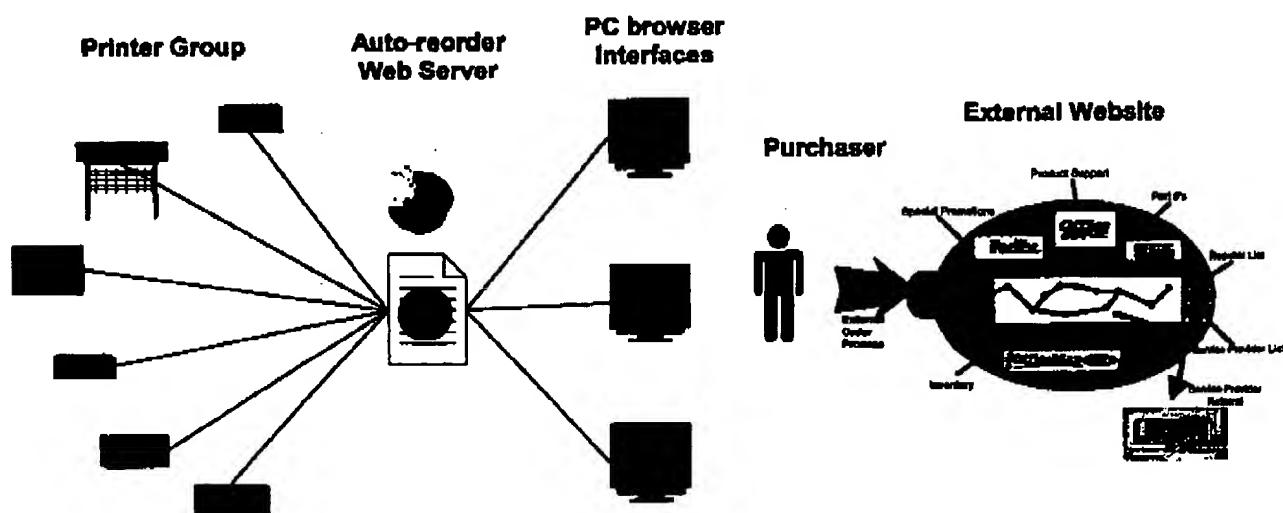
### The simple case...

In this case there is one person responsible for a group of printers that does not always interact with the ordering system from the same PC each time.

In this scenario, a centralized auto-reorder system monitors a group of printers. The Auto-reorder system has a built in web server that is capable of sending an email to notify a purchaser when it is time to place an order. The email could contain all the required information and a hotlink that takes the purchaser directly to an external website, or the email may contain a hotlink that takes the purchaser back to the Auto-reorder web page and then on to the external website. In either case, the purchaser ends up viewing an external ordering website with a shopping cart pre-built with all of their consumables ready to check out.

The external website has the additional complexity that it is run by an OEM (i.e. HP), but the purchaser chooses a reseller to purchase through (OfficeMax, OfficeDepot, Staples, etc.). The first time the purchaser places an order through the system, they are prompted to choose a "favorite" reseller. The favorite needs to be stored in a cookie so that the purchaser does not have to identify themselves to the external website with each new interaction, nor does the purchaser have to re-select their favorite reseller. All of the purchaser's preferences will be stored in the cookie.

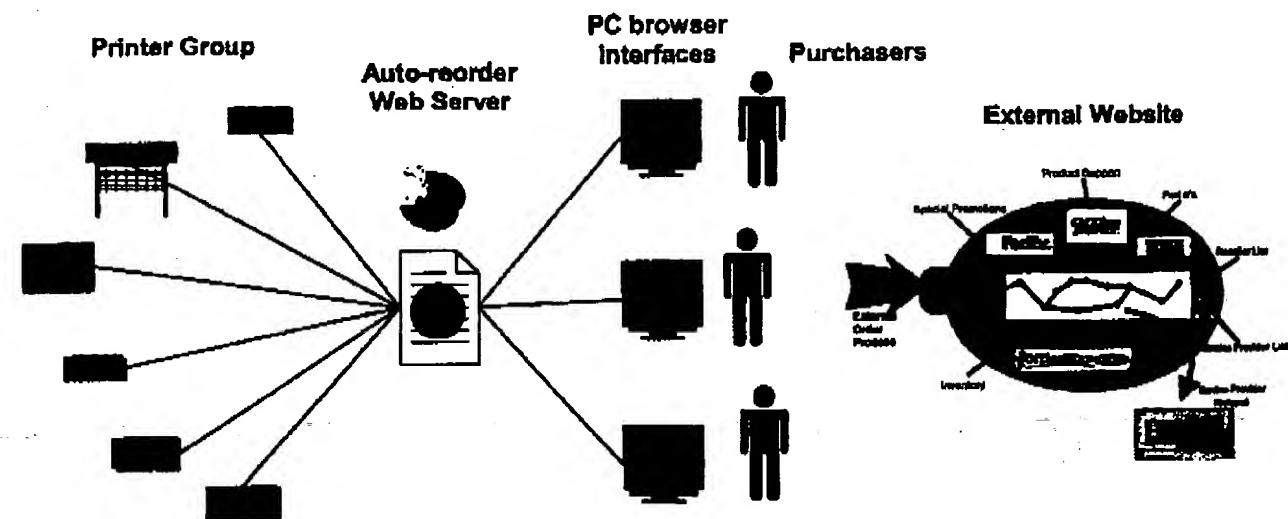
Today, cookies are stored on the PC that is running the web browser. However, if the cookie is stored on any of the PC's, it will not be accessible if the purchaser switches to another PC. Each of the PC's has access to the web server that is monitoring the printers and prompting the purchaser to place an order. This makes the Auto-reorder web server a natural storage facility for anything central to the order process.



**Case #2 ...**

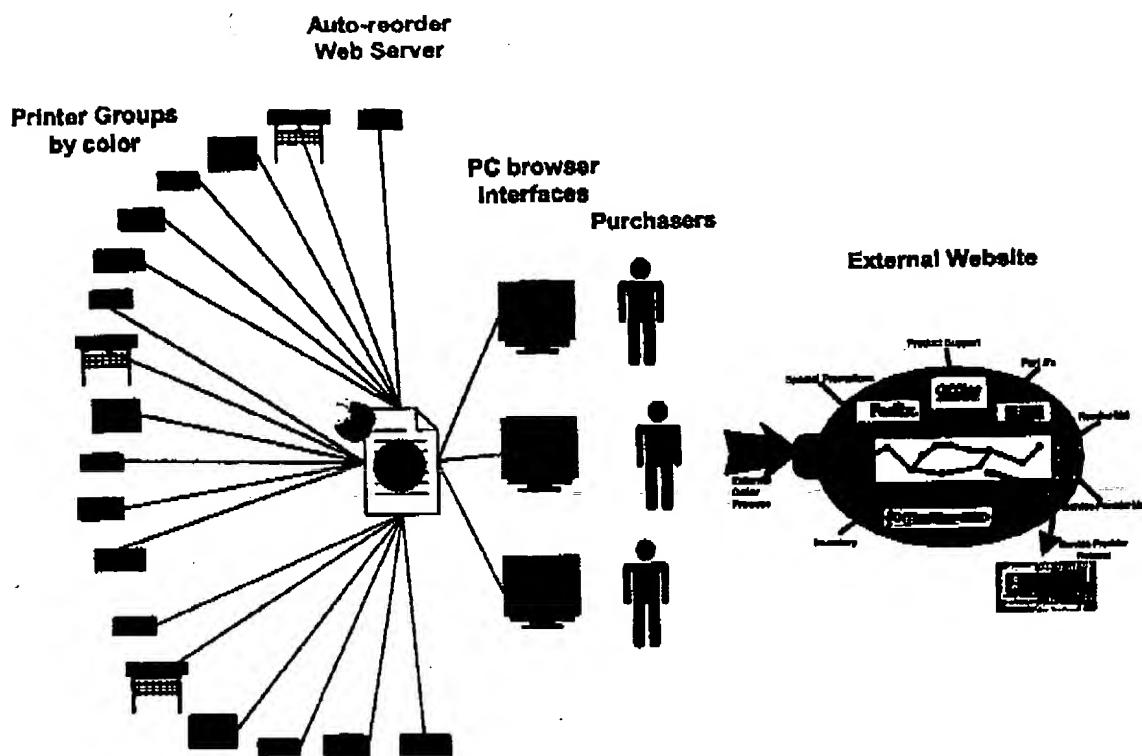
In this case there is more than one person responsible for a group of printers.

This involves the same centralized Auto-reorder server, but different individuals acting as purchasers at different times. A centralized cookie would allow the storage of data such as purchase order number, credit card information, shipping info, etc. This allows the purchasers to coordinate and use the same information without consciously communicating.



**Case #3...**

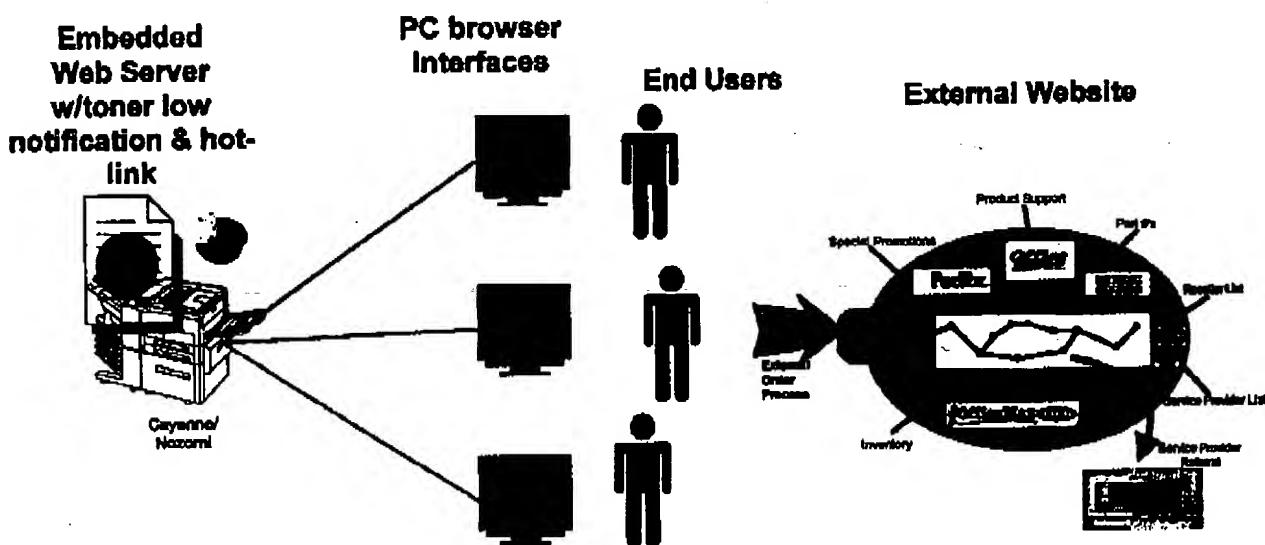
There may be several purchasers, each responsible for a different group of printers, but a need to have uniformity throughout the corporation in the order placement (i.e. sharing a common purchase order, shipping address, etc.).



### Case #4...

In this case there is no centralized Auto-reorder system and each printer prompts whichever end user is printing at the time to place an order ad hoc. The printer itself contains a web server that is capable of sending email or being an object that can be browsed by a web browser.

The end user receives notification in the form of an email or some other alert that they are running low on toner (or some other consumable). The alert contains a hot-link that either takes the user back to the printer web page and then on to the external website or launches the user directly to the external website. In either case all of the ordering information is passed along with the URL. If the user sets any preferences on the external website (the first person to do this might be an administrator to initially setup and configure), these preferences need to be saved and stored in a central place where all the users have access. In this case it would be on the printer. This gives consistency in where and how each end-user places the order.



### More Solution Details

In order for any of these solutions to work, the browser needs an extension to the Cookie HTTP Specification. This extension would basically identify where the cookie is to be stored. It would allow the additional flexibility of providing a storage pathname that could be interpreted as being anywhere the browser PC could reach. This has some security issues, but these could be resolved separately – this could be a feature that could be turned on/off.

The browser extension might happen in the form of a plug-in that enables this functionality (and may also qualify it to avoid the security issues).

One form of security qualification is that the plug-in might only allow the "storage pathname" functionality with a specific website (HP provides one with the fictitious "HP Webdirector" website...). Or the plug-in might maintain a list of trusted websites.

### Possible Claims:

1. The ability to designate where to store a cookie in the users environment (printer, pc, server).
2. The ability to share the cookie between multiple users or with access from multiple locations with the same user.
3. Adding a parameter to the cookie specification designating where to store the cookie.
4. A browser plug-in that maintains a list of trusted locations to accept remote cookie storage parameters from.
5. A browser plug-in that allows for security & cookie management
6. Cookie contents.